VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 74.6 -- SURFACE CLEANING AND DEGREASING

(Adopted 5/29/79, Revised 1/20/81, 7/5/83, 9/12/89, 5/8/90, 12/10/91, 7/9/96, 11/10/98, 1/8/02)

A. Applicability

The requirements of this rule shall apply to any person who performs solvent cleaning activities, and any person who manufactures or supplies solvents for use in solvent cleaning activities in Ventura County, except as noted in subsection C.1 of this rule. This rule shall not apply to cleanup and substrate surface preparation regulated by District surface coating rules.

B. Requirements

1. Solvent Requirements

	Maximum Limits (As Applied)		
Solvent Cleaning Activity	ROC Composite Partial Pressure (mm Hg @ 20°C)		ROC Content (grams/liter)
Repair or Maintenance Cleaning	20	And	900
Cleanup, Including Cleaning of Application Equipment	35	And	950
Manufacturing or Surface Preparation	----		70

2. Cleaning Devices and Methods Requirements

No person shall perform solvent cleaning unless one of the following cleaning devices or methods is used:

a. Wipe cleaning where solvent is dispensed to wipe cleaning materials from containers that are kept closed to prevent evaporation, except while dispensing solvent or replenishing the solvent supply;

b. Application of solvent from a hand held spray bottle, squirt bottle or other closed container with a capacity of one liter or less;

c. Non-atomized solvent flow, dip, or flush method where pooling is prevented or drained, and all solvent runoff is collected in a manner that enables solvent recovery or disposal. The collection system shall be kept closed to prevent evaporation except while collecting solvent runoff or emptying the collection system;

d. A properly used enclosed gun washer or low emission spray gun cleaner.

3. Prohibitions

a. No person shall atomize any solvent into open air.

b. No person shall allow liquid cleaning solvent to leak from any equipment or container.

4. Storage and Disposal

a. All ROC-containing solvents shall be stored in non-absorbent, non-leaking containers which shall be kept closed at all times except when filling or emptying.

b. Waste solvent and waste solvent residues shall be disposed of in a manner conforming with Division 20, Chapter 6.5 of the California Health and Safety Code.

5. Control Equipment

In lieu of complying with the requirements of section B.1, B.2, B.3.a, and D.1, a person may comply by using an emission control system in association with the cleaning activity regulated by this rule provided the emission control system maintains a combined capture and control efficiency (product of the capture efficiency and the control efficiency) of at least 85 percent, by weight, of the emissions generated by the cleaning activity.

6. Compliance Statement Requirement: The manufacturer of any solvent subject to this rule shall designate on the solvent container or on separate data sheets the maximum volatile organic compound (VOC) content and the ROC Composite Partial Pressure of the solvent, as supplied. The VOC content shall be expressed as grams of VOC per liter of material. The ROC Composite Partial Pressure of the solvent shall be expressed as mm Hg @ 20°C.

C. Exemptions

1. Rule 74.6 shall not apply to:

a. Cleaning activities using cleaning agents that contain two percent or less organic solvent, as applied by weight.

b. Cleaning activities using solvents which are purchased in, and applied from, manufacturer- or distributor-labeled containers of one liter or less in volume, including aerosol products.

c. Janitorial cleaning including graffiti removal.

d. Cleaning activities conducted at residences, schools, medical care facilities, prisons, restaurants, health clubs and theaters.

e. Stripping of cured coatings (e.g.; stripping), cured adhesives (e.g.; debonding, unglueing), and cured inks.

f. Cleaning activities subject to any provision, including recordkeeping and exemption provisions, of the following rules:

Rule 74.3, Paper, Fabric and Film Coating Operations
Rule 74.5.1, Petroleum Solvent Dry Cleaning
Rule 74.5.2, Synthetic Solvent Dry Cleaning
Rule 74.12, Surface Coating of Metal Parts and Products
Rule 74.13, Aerospace Assembly and Component Manufacturing Operations
Rule 74.14, Polyester Resin Material Operations
Rule 74.18, Motor Vehicle and Mobile Equipment Coating Operations
Rule 74.19, Graphic Arts
Rule 74.19.1, Screen Printing Operations
Rule 74.20, Adhesives and Sealants
Rule 74.21, Semiconductor Manufacturing
Rule 74.24, Marine Coating Operations
Rule 74.24.1, Pleasure Craft Coating Operations
Rule 74.30, Wood Products Coatings

2. Rules 74.6, 74.6.1, 74.6.2 and 74.6.3 shall not apply to:

   a. Any cleaning device or mechanism and associated operating conditions which has been approved in writing by the APCO and the USEPA to result in emissions lower than the emissions that would result if the cleaning were performed in compliance with the requirements of those rules.

   b. Any cleaning device or mechanism for which emissions are regulated by National Emission Standards for Halogenated Solvent Cleaning, 40 CFR Parts 9 and 63, Subpart T, Sections 63.460 through 63.469 (Degreasing MACT Standards).

3. Subsection B.1 of Rule 74.6 shall not apply to:

   a. Cleaning of electronic components or medical devices using solvent with an ROC composite partial pressure of 33 mm Hg @ 20°C or less and an ROC content of 900 g/l or less. The use of isopropyl alcohol shall be deemed in compliance with this requirement.

   b. Cleaning of solar cells, laser hardware, scientific instruments, or high-precision optics.

   c. Cleaning in laboratory tests and analyses, or bench scale or short term research and development programs.

   d. Removal of elemental sodium from the inside of pipes and lines.

   e. Cleaning of mold release compounds from molds.

   f. Cleaning of tools used to cut or abrade cured magnetic oxide coatings.

   g. Cleaning of aerospace assembly and subassembly surfaces that are exposed to strong oxidizers or reducers such as nitrogen tetroxiode, liquid oxygen or hydrazine.

h. Facilitywide use of less than 1 gallon per week of non-compliant solvent where compliant solvents are not available. Any person claiming this exemption shall maintain records of the volume and formulation of non-compliant solvent used on an as-used (recording use each day such material is used) basis. Records shall be saved for at least two (2) years from the date of each record and shall be made available to District personnel upon request.

4. Subsections B.1 and B.2 of Rule 74.6 shall not apply to:

a. Aircraft engine gas path cleaning or stationary gas turbine gas path cleaning using solvent with an ROC content of 200 g/l as applied or less.

b. Surface cleaning conducted in a degreaser that complies with the requirements of Rules 74.6.1, 74.6.2, or 74.6.3, as applicable.

D. Recordkeeping Requirements

The following records are required to demonstrate compliance with Rule 74.6. Records shall be saved for at least two (2) years from the date of each record. All such records shall be made available to District personnel upon request.

1. Maintain a current material list showing each ROC containing material used in solvent cleaning activities. The list shall summarize the following information:

a. Solvent name and manufacturer's description.

b. All intended uses of the solvent at the facility, classified as follows:

1) Repair or Maintenance cleaning, or
2) Cleanup, including application equipment cleaning, or
3) Manufacturing or Surface Preparation Cleaning, or
4) Solvent used pursuant to an exemption in Section C (specify the exemption claimed).

c. The ROC content (and ROC composite partial pressure, if applicable) of the solvent.

d. If the solvent is a mix of materials blended by the operator, record the mix ratio.

2. When compliance is achieved through the use of add-on control equipment pursuant to section B.5 of this rule, maintain records on a daily basis of key operating parameters for the emission control equipment, including, but not limited to:

a. Hours of Operation;

b. Routine and nonroutine maintenance; and

c. All information needed to demonstrate continuous compliance with section B.5 of this rule, such as temperatures, pressures, and or flowrates.

E. Test Methods

The following test methods shall apply to Rules 74.6, 74.6.1, 74.6.2 and 74.6.3. Other test methods determined to be equivalent and approved in writing by the APCO and by EPA may also be used.

1. The ROC content of materials shall be determined by EPA Test Method 24 or 24A. (40 C.F.R. 60, Appendix A)

2. The efficiency of a collection device shall be determined by "Guidelines for Determining Capture Efficiency" – EPA 1/9/95.

3. The efficiency of a control device shall be determined by EPA Method 25 or 25A.

4. The identity of components in solvents shall be determined using manufacturer's formulation data or by using ASTM E168-67, ASTM E169-87, or ASTM E260-85.

5. ROC composite partial pressure of a solvent shall be calculated using a widely accepted published source such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973), Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company, CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87), and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985). The true vapor pressure of a component in a solvent mix may be determined by ASTM Method D2879-86. The ROC composite partial pressure of a solvent mix consisting entirely of ROC may be determined by ASTM Method D2879-86.

6. Initial boiling point of solvent shall be determined by ASTM 1078-78 or by using a published source such as listed in subsection E.5.

7. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20 ^{O}C. The minimum test temperature shall be 15 ^{O}C.

F. Violations

Failure to comply with any provision of Rules 74.6, 74.6.1, 74.6.2 or 74.6.3 shall constitute a violation.

G. Definitions

The following definitions apply to Rules 74.6, 74.6.1, 74.6.2 and 74.6.3:

1. "Adhesive": A substance that is used to bond one surface to another.

2. "Aerosol Product": A hand-held non-refillable container which expels pressurized product by means of a propellant induced force.

3. "Air Vapor Interface": The top of the solvent-vapor layer, and the air touching this layer.

4. "Application Equipment": Equipment used to apply coatings, inks or adhesives including but not limited to: spray guns, rollers, brushes, and printing presses. Most application equipment cleanup activities are regulated by source specific rules rather than Rule 74.6.

5. "Batch loaded vapor degreaser": Any nonconveyorized, boiling solvent degreasing equipment.

6. "Cleanup": The removal of uncured coating, adhesive or ink from any surface, including application equipment, oversprayed surfaces, and hands.

7. "Coating": A material which forms a film and is applied to a surface to beautify and/or protect the surface.

8. "Cold cleaner": Any batch loaded, nonboiling solvent degreaser.

9. "Conveyorized degreaser": Any continuously loaded conveyorized degreasing equipment, either boiling or nonboiling.

10. "Condenser Equipment": Any equipment, such as condenser coils or water jacket, used to condense solvent vapor in a vapor degreaser.

11. "Condenser Water Flow Switch": A safety switch that turns off the sump heat if the condenser water fails to circulate or rises above the design operating temperature.

12. "Cured Coatings, Cured Inks, and Cured Adhesives": Coatings, inks, and adhesives which are dry to the touch.

13. "Degreaser": A container for solvent and articles being cleaned which includes a facility for draining solvent from surfaces such that the drained solvent is returned to the container. All degreasers can be classified as one of the following: 1) cold cleaner (including remote reservoir cold cleaners), 2) batch loaded vapor degreaser, or 3) conveyorized degreaser.

14. "Electronic Components": Circuit card assemblies, printed wire assemblies, printed wiring boards, soldered joints, ground wires, bus bars, magnetic tape heads and tape drive mechanisms, and other electrical fixtures, except for the actual cabinet in which the components are housed.

15. "Enclosed Spray Gun Washer": Electrically or pneumatically operated system that is designed to clean spray application equipment while enclosed. A gun washer may also be considered a gun cleaning system that

consists of spraying solvent into an enclosed container using a snug fitting.

16. "Exempt Organic Compounds": As defined in Rule 2.

17. "Freeboard height"

    a. For cold cleaners, the distance from the top of the solvent to the top of the tank. For remote reservoir cold cleaners, the distance from the top of the solvent drain to the top of the tank.

    b. For batch loaded vapor degreasers, the distance from the solvent vapor-air interface to the top of the degreaser tank.

    c. For conveyorized degreasers, the distance from the top of the solvent or solvent vapor-air interface to the bottom of the lowest opening in the degreaser where vapors can escape.

18. "Freeboard ratio": The freeboard height divided by the smaller of the length or width of the degreaser.

19. "High Vapor Cutoff Thermostat": A manually reset switch which shuts off the sump heat if the temperature at the air-vapor interface rises above the designed operating level.

20. "High Volatility Solvent": Any solvent that is not low volatility solvent.

21. "Ink: Any fluid or viscous composition used in printing, impressing, or transferring an image onto a substrate.

22. "Janitorial Cleaning": Is the cleaning of building or facility components, such as the floor, ceiling, walls, windows, doors, stairs, bathrooms, furnishings and the exterior surfaces of office equipment. Janitorial Cleaning does not include the cleaning of process equipment such as piping, storage vessels and work benches.

23. "Lip Exhaust": A system which collects solvent vapors escaping from the top of a cleaner and directs them away from personnel using the cleaner.

24. "Liquid Leak": A visible liquid solvent leak from a container at a rate of three or more drops of liquid solvent per minute, or a visible liquid mist.

25. "Low emission spray gun cleaner": Any spray equipment cleanup device which has passive solvent losses of no more than 0.6 grams per hour and has active solvent losses of no more than 15 grams per operating cycle as defined by the test method in Subsection E.7.

26. "Low Volatility Solvent": Unheated solvent with an ROC composite partial pressure of 2 mm Hg or less @ 20°C.

27. "Manufacturing Cleaning": Solvent cleaning of parts or components in a process of making goods or articles by hand or by machinery from those parts or components.

28. "Maintenance Cleaning": A solvent cleaning activity carried out to keep tools, machinery, molds, forms, jigs, equipment, or general work areas in clean and good operational condition.

29. "Medical Device": A contrivance including any component or accessory that meets any one of the following conditions:

    a. It is intended for use in the diagnosis of disease or other condition, or in the cure, mitigation, treatment, or prevention of disease.

    b. It is intended to affect the structure or any function of the body.

    c. It is defined in the National Formulary or the United States Pharmacopoeia, or any supplement to them.

30. "Mold Release Compound": A substance applied to a mold, form or pattern to prevent materials from sticking to surfaces.

31. "Non-absorbent Containers": Containers made of nonporous material which do not allow the migration of the liquid solvent through them.

32. "Non-atomized Solvent Flow": The use of a solvent in the form of a liquid stream without atomization.

33. Non-leaking Containers": Containers without liquid leaks.

34. "Open Air": Solvent that is atomized into open air is solvent that is discharged in a direction and velocity that prevents impaction of any of the solvent on a surface.

35. "Organic Solvent": Any liquid containing organic compounds. Organic compounds are any compounds containing carbon. Solutions, emulsions, and dispersions of water and soap, or water and detergent, are not organic solvents.

36. "Passive Solvent Losses:" Emissions resulting from natural vaporization of solvent from spray gun cleaning equipment not being used in a cleaning cycle.

37. "Reactive Organic Compound (ROC)": As defined in Rule 2.

38. "Refrigerated Freeboard Chiller": Any equipment mounted above the condenser equipment which carry a refrigerant to provide a chilled air blanket above the solvent vapor, to reduce emissions from a vapor degreaser.

39. "Remote Reservoir Cold Cleaner": A device in which solvent is moved through a sink-like work area for cleaning parts and drains immediately, without forming a pool, through a single drain hole less than 100 square

centimeters (15.5 square inches) in area into an enclosed container which is not accessible for soaking parts.

40. "Repair Cleaning": A solvent cleaning activity carried out during a repair process.

41. "Repair Process": The process of returning a damaged object or an object not operating properly to good condition.

42. ROC Composite Partial Pressure": The sum of the partial pressures of the compounds defined as ROCs. ROC composite partial pressure is calculated as follows:

$$PP_C = \frac{\sum_{i=1}^{n} \left(W_i\right)\left(VP_i\right) \Big/ \left(MW_i\right)}{\left(W_w / MW_w\right) + \sum_{e=1}^{n} \left(W_e / MW_e\right) + \sum_{i=1}^{n} \left(W_i / MW_i\right)}$$

Where:
W_i = Weight of the "i"th ROC compound, in grams
W_w = Weight of water, in grams
W_e = Weight of the "e"th exempt organic compound, in grams
MW_i = Molecular weight of the "i"th ROC compound, in g/(g-mole)
MW_w = Molecular weight of water, in g/(g-mole)
MW_e = Molecular weight of the "e"th exempt compound, in g/(g-mole)
PP_C = ROC composite partial pressure at 20 C, in mm Hg
VP_i = Vapor pressure of the "i"th ROC compound at 20 C, in mm Hg.

43. "ROC Content": The ROC content of a solvent is calculated by the following equation:

$$\text{ROC Content} = \frac{Ws - Ww - Wes}{Vm}$$

Where: Ws = Weight of volatile compounds in grams
Ww = Weight of water in grams
Wes = Weight of exempt organic compounds in grams
Vm = Volume of material in liters

44. "Runoff": Liquid that flows or drips off of a surface being cleaned.

45. "Solvent Cleaning": The use of organic solvent to remove loosely held uncured adhesives, uncured inks, uncured coatings, and other contaminants which include, but are not limited to, dirt, soil, lubricants, coolant, moisture, grease and fingerprints from parts, products, tools, machinery, equipment, and general work areas.

46. "Spray Pump Control Switch": A safety switch that prevents the spray pump from operating if the vapor level falls below the design operating level.

47. "Stripping": The removal of cured coatings, cured inks, cured adhesives, and contaminants that are mechanically or chemically bonded to a surface.

48. "Surface Preparation:" The removal of contaminants prior to coating, adhesive or ink application.

49. "Volatile Organic Compound (VOC)": Shall have the same meaning as Reactive Organic Compounds (ROC) as defined in Rule 2 of these Rules.

50. "Wipe Cleaning": The method of cleaning a surface by physically rubbing it with a material or device such as a rag, paper, brush or cotton swab moistened with a solvent.